AMENDMENTS

In the Claims:

1. (Currently amended) A method of producing an addressable array of at least two different polymeric ligands covalently bonded to a surface of a substrate, said method comprising:

(a) contacting blocked monomers to at least a first location and a second location of a substrate having a surface displaying functional groups under conditions sufficient for said blocked monomers to covalently bond to said surface in said first and second locations to produce a substrate surface displaying covalently bound blocked monomers, wherein said contacting occurs at a printing station and said blocked nucleoside monomers are contacted with said surface by pulse-jet deposition;

(b) moving said substrate from said printing station to a flow cell station;

(c) in said flow cell station removing blocking groups of said blocked monomers in a functional group generation step that comprises sequentially contacting at least a portion of said surface with a plurality of different liquids by displacing a previous liquid of said plurality with an immediately subsequent liquid; and

(d) reiterating steps (a) to (c) at least once to produce said addressable array having a first polymeric ligand of a first monomeric sequence at said first known location of said substrate and a second polymeric ligand of a second monomeric sequence that is ~~difference~~ **different** from said first monomeric sequence at said second known location of said substrate.

2. (Cancelled)

3. (Previously presented) The method according to claim 1, wherein said plurality of different liquids includes at least an oxidizing fluid and a deblocking fluid.

4. (Original) The method according to claim 3, wherein said plurality of different liquids further includes a wash liquid.

5. (Original) The method according to claim 4, wherein said plurality of different liquids further includes a capping liquid.

6. (Previously presented) The method according to claim 1, wherein any two sequentially applied liquids of said plurality have a different density.

7. (Original) The method according to claim 6, wherein any two sequentially applied liquids of said plurality have a density difference (A) of greater than zero.

8. (Canceled)

9. (Previously presented) The method according to claim 1, wherein said displacing comprises flowing said immediately subsequent liquid across said surface in a manner sufficient to produce a stratified liquid interface between said immediately subsequent and previous liquids that moves across said surface.

10. (Previously presented) The method according to claim 1, wherein said plurality of liquids are flowed across said surface at a rate ranging from about 1 cm/s to about 20 cm/s.

11. (Previously Presented) The method according to claim 9, wherein said method further comprises sensing movement of said stratified liquid interface as it moves across said surface.

Claims 12 - 13. (Canceled)

14. (Original) The method according to claim 1, wherein said functional group generation step (b) comprises sequentially contacting said surface in a flow cell with a plurality of different liquids in the following order: (i) an oxidizing liquid; (ii) a wash liquid; (iii) a deblock liquid; and (iv) a wash liquid; wherein said plurality of liquids is sequentially contacted with said surface by displacing any previous liquid of

said plurality with an immediately subsequent liquid.

15. (Original) The method according to claim 14, wherein said displacing comprises flowing said immediately subsequent liquid across said surface in a manner sufficient to produce a stratified liquid interface between said immediately subsequent and previous liquids that moves across said surface.

16. (Original) The method according to claim 14, wherein said plurality further comprises a capping liquid which is contacted with said surface between said oxidizing liquid and said deblock liquid.

Claims 17 to 27 (Canceled).

28. (Previously Presented) The method according to claim 1, wherein said substrate is a planar substrate.

29. (Previously Presented) The method according to claim 1, wherein said flow cell is oriented at least partially vertical to provide for pressure gradient driven stratification during said functional group generation step (c).

30. (Previously Presented) The method according to claim 1, wherein said flow cell is oriented such that the plane of said flow cell and the horizontal plane of the environment is at least 5º.

31. (Previously Presented) The method according to claim 1, wherein said flow cell is oriented such that the plane of said flow cell and the horizontal plane of the environment is at least 30º.

32. (Previously Presented) The method according to claim 1, wherein said flow cell is oriented such that the plane of said flow cell and the horizontal plane of the environment is at least 60º.

33. (Previously Presented) The method according to claim 1, wherein said flow cell is oriented such that the plane of said flow cell and the horizontal plane of the environment is at least 75º.

34. (Previously Presented) The method according to claim 1, wherein said addressable array comprises at least 5 different polymeric ligands of different monomeric sequence at different known locations of said substrate.

35. (Previously Presented) The method according to claim 1, wherein said addressable array comprises at least 10 different polymeric ligands of different monomeric sequence at different known locations of said substrate.

36. (Previously Presented) The method according to claim 1, wherein said substrate is moved from said printing station to said flow cell with a transfer element.

37. (Currently amended) The method according to Claim **[[35]]** **36**, wherein said transfer element is a robotic arm.